REDESCRIPTION OF THE MONOTYPIC GENUS *MICROLEDRELLA* EVANS (HOMOPTERA: CICADELLIDAE: LEDRINAE)

M.M. STEVENS

Yanco Agricultural Institute, NSW Agriculture and Fisheries, Yanco, N.S.W., 2703

Abstract

The atypical thymbrine genus *Microledrella* Evans and its only species, *M. minuta* Evans, are redescribed from the type material. The genus displays a combination of morphological features that render its taxonomic position uncertain. The current placement of *Microledrella* in the Thymbrini cannot be fully evaluated until more information is available on related groups, most notably the Australasian Ledrini.

Introduction

The genus *Microledrella* was established by Evans (1969) for a single species, *M. minuta*, known only from Irian Jaya. Evans (1969) placed the genus in the Thymbrini, one of three tribes of the Ledrinae commonly recognised from the Australasian area. *M. minuta* was considered an annectent form with certain ulopine characteristics and a close resemblance to the atypical thymbrine *Ledrella brunnea* Evans, a species known only from south-east and south-west Australia (Evans 1969). It has been suggested that *M. minuta*, *L. brunnea*, and members of the New Zealand genus *Novothymbris* may 'lie close to the base of the thymbrid stem' (Evans 1982).

M. minuta shares certain similarities with *L. brunnea*, notably dorsal ocelli, a carinate crown, and a hind femoral setal pattern that often differs from the strongly conservative 3+0+0 arrangement typical of the Australian Thymbrini. These features are, however, also found in taxa currently included in the Ledrini. *M. minuta* displays several morphological features which are absent from the Australian Thymbrini, including strongly granular microsculpture, an anteriorly expanded frontoclypeus, atypically shaped second valvulae, and tegminal venation in which the cells are shortened and the crossveins variable in position. The uncertain taxonomic position of the genus has been recognised previously (Stevens 1990, 1991), and cannot be resolved at the present time. Males of *M. minuta* are unknown, and certain important characters such as hind femoral setation are variable, both between the two known specimens and also within individuals. Further studies on both the Thymbrini and the Australasian Ledrini are required before changes in suprageneric classification can be justified.

Methods

Specimens were examined using a Wild M5 stereomicroscope fitted with a Wild camera lucida. Ovipositors were examined after maceration of abdomens in hot 10% w/v aqueous KOH and dissection in 70% ethanol. Definitions of measurements, morphological ratios, and the terms 'crown' and 'vertex' follow Stevens (1990, 1991). Length is defined as body length in dorsal view measured along the midline from the apex of the head to the apex

of the abdomen or a point level with the apices of the folded tegmina, whichever is the greatest. The crown ratio (CR) is the length of the crown in the midline divided by the length of the crown adjacent to the eye measured parallel to the midline. The pronotal ratio (PR) is total length (as defined previously) divided by the maximum width of the pronotum in dorsal view. The term 'crown' refers to that part of the head (excluding the eyes) that is visible in dorsal view. The term 'vertex' refers to the dorsal (or anterior) area of the face above the antennal ledges, excluding the eyes and the dorsal region of the frontoclypeus. Venational terminology follows Evans (1946); hind femoral setation is described using the formula method, as discussed by Fletcher & Stevens (1988).

Tribe Thymbrini

Genus *Microledrella* Evans

(Figs 1 - 10)

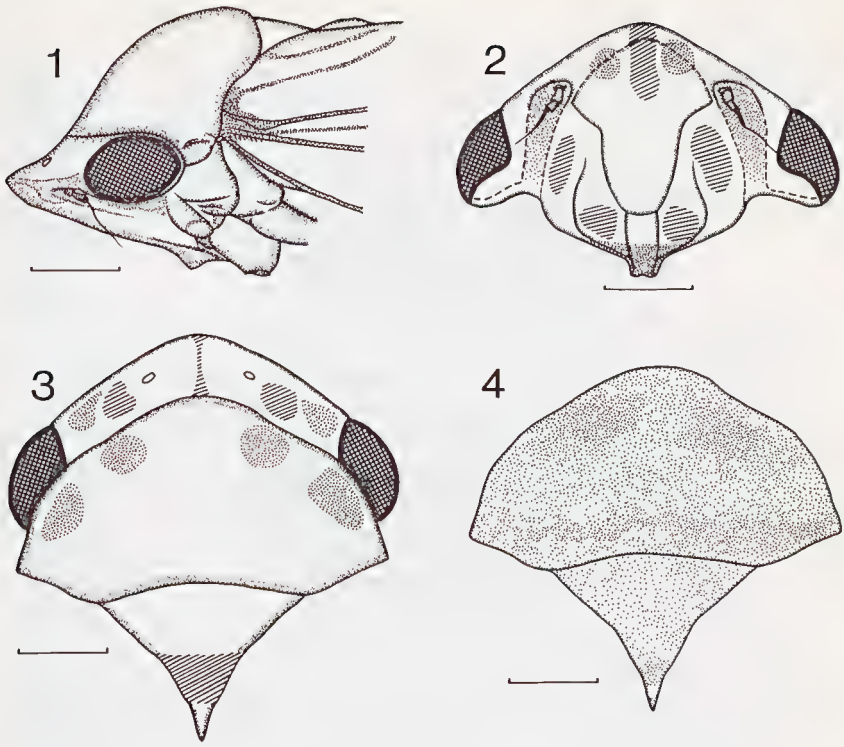
Microledrella Evans 1969: 745, fig. 4A, B.

Type species: *Microledrella minuta* Evans, by original designation.

Medium-sized leafhoppers (Length ♀ 5.75 and 5.82 mm), generally pale to mid brown in colour.

Female

Head slightly spatulate, acute in profile (Fig. 1). Crown in dorsal view of approximately even length throughout or slightly longer in midline (CR 1.03 and 1.26), strongly punctate, with an elevated longitudinal median ridge (Fig. 3). Areas lateral to ocelli medianly swollen, laterally concave adjacent to eyes. Ocelli clearly visible dorsally. Subocellar ridge absent. Antennal ledges distinct, close to margin of head (Fig. 2), downturned and not extending to eye margins. Frontoclypeus moderately planar in posterior half, anterior half with a median longitudinal ridge that extends across vertex to head margin, and with depressed areas laterally. Anteclypeus moderately and gradually depressed in apical two-thirds. Apical half of lora very strongly swollen, each with a protuberant transverse ridge conspicuous in profile (Fig. 1). Maxillary plates swollen along margins with lora. Antennal depressions deep basally, granular, clearly delimited from remainder of maxillary plates (Fig. 2). Face entirely rugose/punctate. Pronotum strongly punctate, very strongly convex in profile, anteriorly declivous, muscle impressions visible as concavities anteriorly; posterior margin elevated above level of scutellum. Scutellum strongly punctate in anterior half, with a well defined transverse sulcus delimiting the conspicuously elevated, transversely striate posterior half. Tegmina punctate, strongly so in basal two-thirds. Venation only vaguely discernible, cells often shortened (Figs 5, 6) as a consequence of variable cross venation in apical area. Additional mcu crossvein may be present, either distinct or indistinct. Additional rm crossveins present or absent. A complete or incomplete additional end vein may be present



Figs 1-4. *M. minuta* Evans ♀. (1), head and thorax, lateral view. (2), facial view (striped areas raised, stippled areas depressed). (3), head and thorax, dorsal view (striped areas raised, stippled areas depressed). (4), thoracic pattern, dorsal view. Scale bars 0.5 mm.

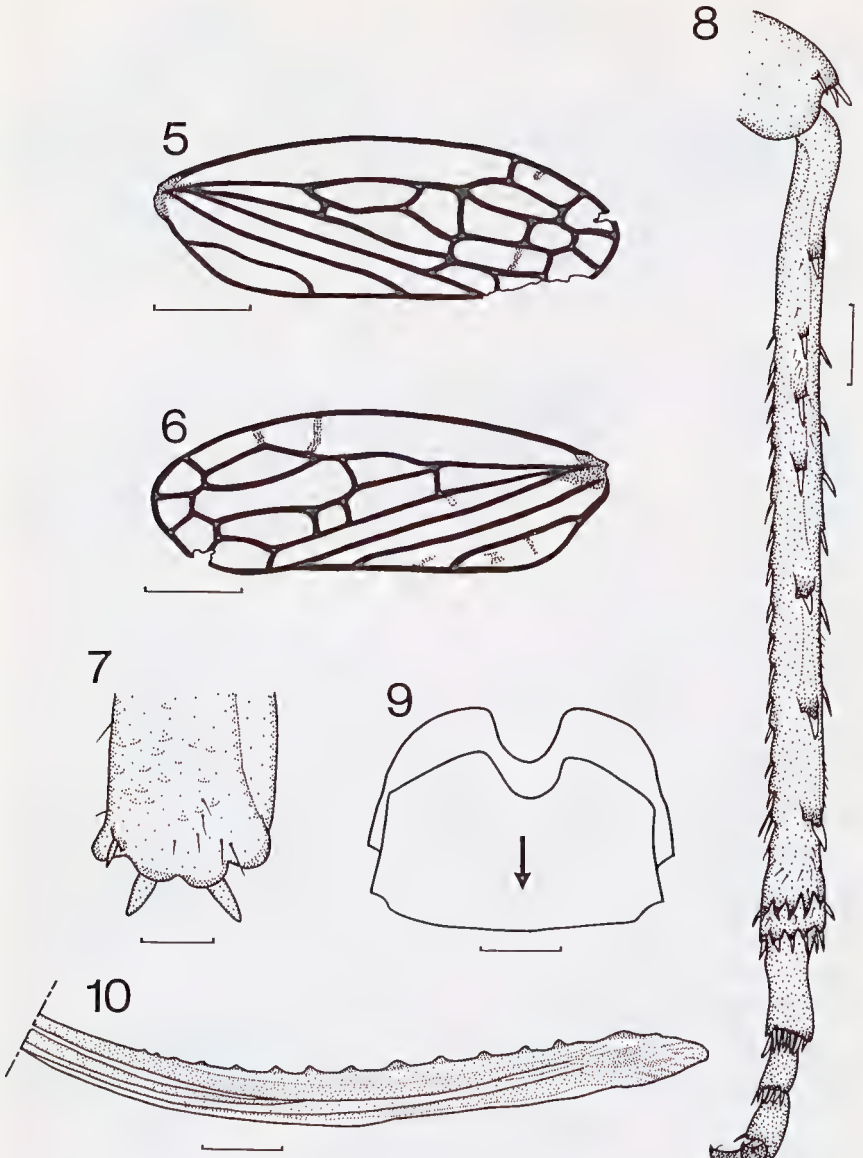
between Sc and third subapical cell. Hind femoral setal formula variable, either 3+0+0, 2+1+0, or 2+0+0, preapical seta when present small and close to apical pair (Fig. 7). Hind tibia with 6 or 7 spur-mounted spines on ventrolateral margin (excluding those in apical and subapical rings), hind tibial margins strongly ridged (Fig. 8).

Female Genitalia. (Figs 9, 10). Second valvulae of ovipositor long, narrow, serrate area not elevated above shaft. Pregenital sternite with a strong indentation on posterior margin.

Microledrella minuta Evans
(Figs 1 - 10)

Microledrella minuta Evans 1969: 745, fig. 4A, B.

Type specimens examined: Holotype ♀. 'New Guinea (Neth.) [Irian Jaya] Wisselmeren: Enarotadi [misspelling of Enarotali] 1900 m. Aug.1, 1955 J.L.



Figs 5-10. *M. minuta* Evans ♀. (5, 6), tegmen venation (holotype). (7), apex of left hind femur, anterior view (leading edge). (8), left hind tibia, tarsus, and femoral apex, ventral view. (9), pregenital sternites (arrow directed anteriorly). (10), apical region of second valvulae. Scale bars: Figs 5, 6, 1.0 mm; Fig. 7, 0.1 mm; Figs 8 - 10, 0.2 mm.

Gressitt Collector.' Reg'n. No. 8881. Paratype: 1 ♀, 'New Guinea (Neth.) Wisselmeren: Enarotadi 2000 m. Aug. 5, 1955 J.L. Gressitt Collector.' Both specimens in the collection of the Bernice P. Bishop Museum, Honolulu, Hawaii.

Other material examined: none.

Length ♀ 5.75 and 5.82 mm. CR ♀ 1.03 and 1.26. PR ♀ 2.83 and 2.86. Male unknown.

Female

Crown mid brown with sparse pale brown markings, median longitudinal ridge pale brown sometimes bordered by mid/dark brown. Vertex and lateral regions of maxillary plates generally concolorous with crown, pale brown markings sometimes sparser. Frontoclypeus, anteclypeus, lora and median areas of maxillary plates mid brown sometimes faintly patterned with mid/dark brown. Antennal depressions mid brown. Labium terminating just before midpoint of mid coxae. Pronotum mid brown with stramineous markings, principally in midline and in a transverse band just anterior to posterior margin; alternatively, stramineous markings reduced, mid/dark brown markings prominent in a transverse band near posterior margin and in two round patches, one either side of midline (Fig. 4). Anterior region of scutellum basically concolorous with pronotum, with a poorly defined longitudinal stramineous stripe in midline, lateral corners uniformly brown. Posterior region behind transverse sulcus dark brown in midsection. Tegmina pale brown, more or less opaque in basal third, remainder translucent, some veins partly cream.

Female Genitalia: (Figs 9, 10). Pregenital sternite with a distinct U-shaped median indentation on posterior margin. Second valvulae of ovipositor with serrations large, widely separated.

Foodplants/Habitat: Foodplants unknown. The only known specimens were collected at altitudes of 1,900 and 2,000 metres.

Distribution: Enarotali, Irian Jaya.

Acknowledgements

Thanks are extended to Dr G.M. Nishida, Bernice P. Bishop Museum, Honolulu, for allowing me to borrow the type specimens of *M. minuta*. Dr M.J. Fletcher, Biological and Chemical Research Institute, NSW Agriculture and Fisheries, is thanked for providing helpful comments on an early draft of the manuscript.

References

EVANS, J.W. 1946. A natural classification of leaf-hoppers (Jassoidea, Homoptera). Part 1. External morphology and systematic position. *Transactions of the Royal Entomological Society of London* **96:** 47-60.

EVANS, J.W. 1969. Characteristics and components of Ledrinae and some new genera and new species from Australia and New Guinea. *Pacific Insects* **11:** 735-754.

EVANS, J.W. 1982. Biogeography of New Guinea leafhoppers (Homoptera: Cicadelloidea). *Monographiae Biologicae* **42:** 639-644.

FLETCHER, M.J. and STEVENS, M.M. 1988. Key to the subfamilies and tribes of Australian Cicadellidae (Hemiptera: Homoptera). *Journal of the Australian Entomological Society* **27:** 61-67.

STEVENS, M.M. 1990. Revision of the genus *Mitelloides* Evans, with two new species from northern Australia (Homoptera: Cicadellidae). *Entomologica Scandinavica* **21:** 281-288.

STEVENS, M.M. 1991. Revision of the genus *Alseis* Kirkaldy (Homoptera: Cicadelloidea: Cicadellidae), with descriptions of six new species. *Invertebrate Taxonomy* **5:** 43-59.